



**UNITED STATES DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL MARINE FISHERIES SERVICE  
Northwest Region  
7600 Sand Point Way N.E., Bldg. 1  
Seattle, WA 98115

Refer to:  
OSB2000-0153

August 9, 2000

Mr. Don Smith  
Acting District Manager  
BLM - Prineville District  
P.O. Box 550  
3050 NE 3<sup>rd</sup> Street  
Prineville, Oregon 97754

Re: Formal Section 7 Consultation on the Effects of Continued Recreational Use of Lands  
Administered by the Bureau of Land Management in the Lower Deschutes River Basin,  
Oregon.

Dear Mr. Smith:

Enclosed is a biological opinion prepared by the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) on recreational use of lands administered by the Bureau of Land Management in the lower Deschutes River Basin, Oregon. The NMFS concludes in this biological opinion that the proposed action is not likely to jeopardize the subject species or adversely modify critical habitat. As required by Section 7 of the ESA, NMFS included reasonable and prudent measures with non-discretionary terms and conditions that NMFS believes are reasonable and appropriate to minimize the impact of incidental take associated with this action.

Please direct any questions regarding this consultation to Ron Lindland of my staff in the Oregon State Branch Office at (503) 231-2315.

Sincerely,

*Michael R. Crouse*  
for William Stelle, Jr.  
Regional Administrator

cc: Jeff Dillon, U.S. Fish and Wildlife Service  
Jim Newton, Oregon Department of Fish and Wildlife



Endangered Species Act - Section 7  
Consultation

BIOLOGICAL OPINION

Continued Recreational Use of Lands Administered by the  
Bureau of Land Management  
in the lower Deschutes River Basin, Oregon.

Agency: Bureau of Land Management, Prineville District, Deschutes Resource Area

Consultation Conducted By: National Marine Fisheries Service,  
Northwest Region

Date Issued: August 9, 2000

Refer to: OSB2000-0153

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## **I. BACKGROUND**

On June 30, 2000, the National Marine Fisheries Service (NMFS) received a letter from the Bureau of Land Management (BLM) requesting formal consultation on the potential effects of continuing recreational use of lands administered by the BLM in the Deschutes Resource Area (DRA) on the Middle Columbia River (MCR) steelhead and their designated critical habitat. The accompanying biological assessment (BA) described the continuing recreational use actions, the environmental baseline, and effects of those continuing recreational use activities on MCR steelhead and their designated critical habitat in the lower Deschutes River Basin and tributaries within the DRA. Most lands within the Deschutes River Basin and downstream of the Pelton Dam are included within the DRA.

The MCR steelhead (*Onchorynchus mykiss*) was listed as threatened under the ESA by NMFS on March 25, 1999 (64 FR 14517). Critical habitat for the MCR steelhead was designated on February 16, 2000 (65 FR 7764), including the mainstem Deschutes River, its tributaries downstream from Pelton Dam, and adjacent riparian areas.

The objective of this biological opinion (Opinion) is to determine whether the subject actions are likely to jeopardize the continued existence of MCR steelhead or result in the destruction or adverse modification of designated critical habitat for MCR steelhead.

## **II. CONTINUING ACTIONS**

The BA describes six types of continuing recreational activities occurring on BLM lands within the DRA: 1) Use of the trail between Mecca Flat Campground and Trout Creek Campground; 2) use of 15 designated drive in campgrounds and four day use areas along the mainstem Deschutes River; 3) use of dispersed camping sites along the mainstem Deschutes River and tributaries; 4) use of the road along the mainstem Deschutes River between the locked gate (MP 61.9) and Macks Canyon (MP 23); 5) use of 12 boat ramps along the mainstem Deschutes River; and 6) general public use by recreationists accessing BLM lands from private lands along the mainstem Deschutes River and tributaries. The BLM found that all these recreational activities “may affect, and are likely to adversely affect” MCR steelhead and critical habitat because recreationists may enter the Deschutes River or its tributaries and trample MCR steelhead redds. User-created trails and dispersed campsites along the mainstem Deschutes River and certain tributaries can result in the removal or trampling of riparian vegetation and streambank disturbance. Small amounts of sediment could enter streams from these trails. These recreational activities are the subject of this Opinion.

The DRA is within the geographic area covered by PACFISH (USDA and USDI 1994); therefore, all BLM activities are required to be consistent with their Resource Management Plan (RMP) as amended by PACFISH. The NMFS anticipates that these continuing actions will be consistent with the pending consultation on land and resource management plans for Federal land management units in the Mid and Upper Columbia River Basins.

## A. Use of Developed Recreational Trails

A trail constructed and maintained by the BLM closely parallels the mainstem Deschutes River for 7.5 miles between Mecca Flat Campground (RM 93.6) and Trout Creek Campground (RM 87.3). This trail is used by the public for hiking, bicycling, occasional horseback riding, and as access for hunting or fishing. Recreationists leave the trail at various locations to get to the river bank and/or the river.

## B. Use of Developed Campgrounds

The BLM administers 15 designated drive-in campgrounds and four day use areas along the lower Deschutes River between Upper Mecca Flat (near RM 93.6) and Macks Canyon (near RM 23). Ten of these campgrounds and three of the day use areas are upstream from White River, which enters the Deschutes River near RM 47 (Table 1). Recreationists using these campgrounds may enter the Deschutes River or nearby tributaries for various reasons (eg. fishing, swimming). Based on the number of fee envelopes collected, Trout Creek Campground received the highest use (2,625 user days) of any BLM-administered campground on the Deschutes River during FY 1999. Beavertail Campground (downstream from White River) received the second highest amount of use at 2,475 user days.

Table 1. Approximate Location by River Mile of BLM-Administered Campgrounds, Boat Launches, and Day Use Areas on the Lower Deschutes River in Relation to Confluences of Known Steelhead Spawning Tributary Streams

<b>Campground (FY 1999 User Days)*</b>	<b>Boat Launch</b>	<b>Day Use Area</b>	<b>Approximate River Mile</b>	<b>Known Steelhead Spawning Tributaries</b>
	Warm Springs		95	
Upper Mecca (1460)	Upper Mecca		93.6	
Trout Creek (2625)	Trout Creek		87.3	
			87	Trout Creek
South Junction (938)			84	
	Nena		58.5	
			58	Nena Creek
Devils Canyon (672)			57.5	
Long Bend (795)	Long Bend		57	
Harpham Flat (1334)	Harpham Flat		56	
Wapanitia (798)	Wapanitia		55	
			51.6	Bakeoven Creek
Oasis (1607)			50.8	

<b>Campground (FY 1999 User Days)*</b>	<b>Boat Launch</b>	<b>Day Use Area</b>	<b>Approximate River Mile</b>	<b>Known Steelhead Spawning Tributaries</b>
		Grey Eagle	50	
Blue Hole (452)		Lower Blue Hole	48.8	
Oak Springs (1141)			48.5	
		Surf City	48	
White River (795)			47	
	Sandy Beach		45.5	
			43	Buck Hollow
	Buck Hollow		42.5	
	Pine Tree		39.5	
Twin Springs (651)			38	
		Oak Brook	35	Oak Brook
Jones Canyon (1005)			33.3	Jones Canyon
Beavertail (2475)	Beavertail		32.2	
Rattlesnake Canyon (963)			29.3	
			24.8	Ferry Canyon
Macks Canyon (1810)	Macks Canyon		23	Macks Canyon

\* Comparative campground use is based on estimated user days at each campground.

### **C. Use of Dispersed Campsites**

Dispersed camping is allowed on BLM lands along the Deschutes River, except on islands and along the access road on the east bank of the river in Segments 2 and 3 (RM 61.9 to RM 23). Most of the use of dispersed campsites is by boaters floating the river and is concentrated close to toilets.

Dispersed camping along the tributary streams is presumed by the BLM to be infrequent because it is often necessary to cross private lands to reach BLM lands on tributaries.

### **D. Use of Access Road Between Locked Gate (RM 61.9) and Macks Canyon (RM 23)**

Recreationists park along this road and walk down to the river at various locations to access the river bank and/or the river for various activities (eg. fishing, swimming, picnicking). The road crosses Bakeoven Creek, Buck Hollow Creek, and Jones Canyon, areas used by MCR steelhead for

spawning and rearing. Very little MCR steelhead spawning occurs in the mainstem Deschutes River downstream from White River (RM 47).

#### **E. Use of Boat Launch Areas**

The BLM administers 12 boat launch areas along the lower Deschutes River between the Warm Springs launch at RM 95 and the Macks Canyon launch at RM 23. Eight of these boat launch sites are upstream from White River (Table 1). Recreationists use these boat ramps to enter the Deschutes River for fishing and whitewater boating. Boaters using the mainstem Deschutes River may stop at the mouths of tributary streams and walk up these streams for short distances to fish or recreate.

#### **F. General Public Use**

Recreationists may enter BLM lands from non-public lands via routes and methods not covered by any of the above categories. These recreations may also enter the Deschutes River or its tributaries for various reasons.

### **III. BIOLOGICAL INFORMATION AND CRITICAL HABITAT**

The listing status and biological information for MCR steelhead are described in Busby et al. (1996) and NMFS (1997). The NMFS designated critical habitat for MCR steelhead on February 16, 2000 (64 FR 5740). The adjacent riparian zone is included in this critical habitat designation. The continuing recreational uses discussed in this Opinion occur within the area designated as critical habitat for MCR steelhead.

According to the BA, spawning and rearing areas for MCR steelhead on BLM lands occur at various locations along the mainstem Deschutes River, in several tributaries (Bakeoven, Buck Hollow, Jones Canyon, Macks Canyon, Nena, Oak Brook, Tenmile, and Trout Creeks), and in the lower two miles of White River (Table 1). MCR steelhead also incubate, feed, and migrate in these waters. MCR steelhead are also suspected, but not confirmed, to spawn in several other Deschutes River tributaries (Cottonwood, Deep, Ferry Canyon, and Ward Creeks). Historically, MCR steelhead are thought to have spawned in Bull Run Canyon, Cove, Fall Canyon, and Sixteen Canyon Creeks and possibly in Bronx Canyon in the Deschutes River basin. Limited data from spawning ground counts in the mainstem Deschutes and tributaries suggest that 85 percent or more of the steelhead spawning in the lower Deschutes River subbasin occurs in the mainstem Deschutes River (Memorandum from Jim Newton, Oregon Department of Fish and Wildlife, commenting on BLM – Lower Deschutes River biological opinion, August 11, 1999). It is also believed that approximately 95 percent of the steelhead spawning in the mainstem Deschutes River takes place upstream of White River (RM 47). This information may be augmented by the results (not yet available) of MCR steelhead spawning surveys conducted by the BLM on the mainstem Deschutes River between RM 95 and RM 51 during FY 2000.

According to the BA, MCR steelhead spawn in the Lower Deschutes River and west side tributaries of the Deschutes River from March through June and spawning in east side tributaries occurs as early as late-January and continues through mid-April. Fry emergence timing depends on time of spawning and water temperature during egg incubation, but usually occurs from late May through June. Therefore, some life stage of MCR steelhead is present in the Deschutes River system throughout the year.

Spawning by MCR steelhead in the mainstem Deschutes River typically takes place near the downstream ends of islands, on the shallow water side between the island and the streambank, and on gravel bars in the river channel. Redds near the shore or along the edges of islands are often associated with overhanging vegetation or other types of cover. The mean water depth at 28 MCR steelhead redds found in the mainstem Deschutes River was 54.1 centimeters (1.8 feet). Mean water velocity over those redds was 71.4 centimeter/second (2.3 feet/second). Mean gravel size in the redds was 32.5 mm (1.28 inches) in diameter (Zimmerman and Reeves 1998). High flows and turbidity make it difficult to find steelhead redds in most sections of the mainstem Deschutes River during most years (telephone conversation with Jim Eisner, BLM Fishery Biologist, June 22, 1999).

Juvenile MCR steelhead rear throughout the mainstem Deschutes downstream from Pelton Dam. They prefer streamside vegetation, specific stream substrates, and other instream structures as cover. Sampling (electrofishing) conducted by Zimmerman and Reeves (1999) in the mainstem Deschutes River found that resident rainbow trout fry (young-of-the-year) outnumbered steelhead fry by approximately 9.5:1. The proportion of Age 1+ and older juvenile resident rainbow trout to juvenile steelhead was approximately 9:1.

#### **IV. EVALUATING CONTINUING ACTIONS**

The standards for determining jeopardy are set forth in section 7(a)(2) of the ESA as defined by 50 CFR Part 402 (the consultation regulations). NMFS must determine whether the action is likely to jeopardize the listed species and/or whether the action is likely to destroy or adversely modify critical habitat. This analysis involves the: (1) Definition of the biological requirements and current status of the listed species; and (2) evaluation of the relevance of the environmental baseline to the species' current status.

Subsequently, NMFS evaluates whether the action is likely to jeopardize the listed species by determining if the species can be expected to survive with an adequate potential for recovery. In making this determination, NMFS must consider the estimated level of mortality attributable to: (1) Collective effects of the proposed or continuing action; (2) the environmental baseline; and (3) any cumulative effects. This evaluation must take into account measures for survival and recovery specific to the listed salmonid's life stages that occur beyond the action area. If NMFS finds that the action is likely to jeopardize, NMFS must identify reasonable and prudent alternatives for the action.

Furthermore, NMFS evaluates whether the action, directly or indirectly, is likely to destroy or adversely modify the listed species' designated critical habitat. The NMFS must determine whether



habitat modifications appreciably diminish the value of critical habitat for both survival and recovery of the listed species. The NMFS identifies those effects of the action that impair the function of any essential element of critical habitat. The NMFS then considers whether such impairment appreciably diminishes the habitat's value for the species' survival and recovery. If NMFS concludes that the action will destroy or adversely modify critical habitat it must identify any reasonable and prudent alternatives available.

For the continuing actions, NMFS' jeopardy analysis considers direct or indirect mortality of fish attributable to the actions. NMFS' critical habitat analysis considers the extent to which the proposed action impairs the function of essential biological elements necessary for juvenile and adult migration, spawning, and rearing of the MCR steelhead under the existing environmental baseline.

## **A. Biological Requirements**

The first step the NMFS uses when applying the ESA section 7(a)(2) to listed steelhead is to define the species' biological requirements that are most relevant to each consultation. The NMFS also considers the current status of the listed species taking into account population size, trends, distribution and genetic diversity. To assess the current status of the listed species, NMFS starts with the determinations made in its decision to list MCR steelhead for ESA protection and also considers new data available that is relevant to the determination.

The relevant biological requirements are those necessary for MCR steelhead to survive and recover to naturally reproducing population levels at which protection under the ESA would become unnecessary. Adequate population levels must safeguard the genetic diversity of the listed stock, enhance their capacity to adapt to various environmental conditions, and allow them to become self-sustaining in the natural environment.

For this consultation, the biological requirements are improved habitat characteristics that function to support successful adult and juvenile migration, spawning and rearing. MCR steelhead survival in the wild depends upon the proper functioning of certain ecosystem processes, including habitat formation and maintenance. Restoring functional habitats depends largely on allowing natural processes to increase their ecological function, while at the same time removing adverse impacts of current practices. In conducting analyses of habitat-altering actions, NMFS usually defines the biological requirements in terms of a concept called Properly Functioning Condition (PFC) and utilizes a "habitat approach" to its analysis (NMFS 1999). The current status of the MCR steelhead, based upon their risk of extinction, has not significantly improved since the species was listed.

## **B. Environmental Baseline**

The environmental baseline is an analysis of the effects of past and present human and natural factors leading to the current status of the species or its habitat and ecosystem within the action area. The "action area" is defined as "all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action" (50 CFR 402.02). The "action area" for this

consultation, therefore, includes the mainstem Deschutes River from Pelton Dam downstream to its mouth and all tributaries in that reach which flow through or beside BLM land.

The current population status and trends for MCR steelhead are described in Busby et al. (1996). Oregon Department of Fish and Wildlife (ODFW 1997) listed the Pelton/Round Butte hydroelectric complex, low summer flows and high water temperatures in tributary streams, and streambank degradation as production constraints on MCR steelhead in the Lower Deschutes River. Fine sediments derived from glaciers on Mount Hood and deposited in the mainstem Deschutes River by the White River at river mile 47 may make spawning gravel less useable for MCR steelhead and can negatively affect aquatic insect production, thus decreasing juvenile salmonid production.

Implementation of standards developed as a result of decisions described in the 1993 Lower Deschutes River Management Plan (BLM et al. 1993) regarding livestock grazing, off-road vehicle management, and management of undeveloped campsites have improved riparian vegetation conditions on BLM lands along the Lower Deschutes River and some of its tributaries. Several campsites within riparian areas have been closed and others are being actively rehabilitated to promote in vegetative recovery. Many of the plan's standards focus on controlling recreation use and protecting riparian and aquatic habitats.

Environmental baseline conditions within the action area were evaluated for the subject actions at the project site and watershed scales. This evaluation was based on the "matrix of pathways and indicators" (MPI) described in "Making Endangered Species Act Effects Determinations for Individual or Grouped Actions at the Watershed Scale" (NMFS 1996). This method assesses the current condition of instream, riparian, and watershed factors that collectively provide properly functioning aquatic habitat essential for the survival and recovery of the species. For the purposes of this consultation, streams within the action area were grouped into four watersheds: 1) Lower Deschutes River; 2) Macks Canyon, Jones Canyon, Bakeoven Creek, Buck Hollow Creek, Ferry Canyon, and Oakbrook Canyon; 3) Wapinitia Creek, Cottonwood Creek, and Deep Creek; and 4) Trout Creek and Tenmile Creek.

In the Lower Deschutes River mainstem, 11 of the 16 habitat indicators for which data were available were rated as properly functioning, based on thresholds presented in NMFS' MPI. Water temperature, chemical contamination/nutrients, and physical barriers were rated as not properly functioning, while drainage network and road density and location were rated as functioning at risk. Summer water temperatures as high as 76°F have been recorded at River Mile 1. The Lower Deschutes is on the Oregon Department of Environmental Quality (ODEQ) Clean Water Act Section 303(d) list because of low dissolved oxygen levels and pH. On the mainstem Deschutes River, the Pelton/Round Butte dam prevents MCR steelhead from reaching historic spawning and rearing habitat.

In stream groups 2-4 (tributaries to the Deschutes River), water temperature, large wood, pool frequency, width/depth ratio, and peak flow/base flow habitat indicators are rated as not properly functioning. Sediment/turbidity, chemical contamination/nutrients, substrate embeddedness, and pool quality indicators are rated as at risk or not properly functioning for these tributary streams.

## V. ANALYSIS OF EFFECTS

### A. Effects of Continuing Actions

The effects determination on habitat parameters in the BA was made using a method for evaluating current aquatic conditions (the environmental baseline) and predicting effects of the action on them. This process is described in the document "Making ESA Determinations at the Watershed Scale" (NMFS 1996). This assessment method was designed to provide adequate information in a tabular form in BAs for NMFS to determine the effects of actions subject to consultation. The expected effect of each action within each watershed is described as "restore," "maintain," or "degrade" for 16 aquatic habitat factors using the "checklist for documenting environmental baseline and effects of the action" (checklist). Results of the completed checklist for the action provide a starting point for determining the overall effect of the action on the environmental baseline in the action area.

Recreationists involved in any of the continuing actions on BLM lands discussed above may wade in the mainstem Deschutes River or its tributaries. In so doing, they may trample MCR steelhead redds found in those streams. The primary adverse effect of recreational activities on MCR steelhead is recreationists (e.g., anglers, whitewater rafters, campers, waders, and swimmers) trampling on MCR steelhead while eggs or pre-emergent fry are in the gravel. Roberts and White (1992) found that humans trampling salmonid redds can measurably decrease egg-to-emergent fry survival. Oregon Department of Fish and Wildlife (ODFW) angling regulations prohibit fishing from a floating device in the Deschutes River. Since anglers are required to leave their boats to fish, some wading is necessary. As discussed above, MCR steelhead typically spawn in water approximately 2 feet in depth on gravel bars and close to islands where anglers and other recreationists could wade. Therefore, anglers or other recreationists could trample MCR steelhead redds. However, the combination of 2-foot water depth and average water velocity of 2.3 feet per second over MCR steelhead redds could discourage many human waders from wading in areas where steelhead redds are typically found. Although the potential does exist for recreationists to trample MCR steelhead redds in the mainstem Deschutes River and its tributaries, the percentage of total redds present that are trampled is expected to be low.

From March through May, another potential effect of recreationists on MCR steelhead in the mainstem Deschutes River and tributaries would be the disturbance of spawning adults. It is believed that repeated disturbance of spawning adult steelhead or salmon by boats passing near the fish may cause the fish to abandon their redds or may stress spawning fish such that only a portion of eggs are deposited. Dufour (1995) found that 11 percent of the water craft (inflatable rafts, kayaks, and inflatable kayaks) that passed by spawning spring/summer chinook salmon in the Upper Salmon River in Idaho caused fish to move from their redds. All these fish returned to their redds within a short time. The NMFS is not aware of any data regarding the effects of disturbance of spawning adult steelhead by boaters or other recreationists.

Uses by recreationists on the mainstem Deschutes River and tributaries are not expected to degrade any of the habitat indicators listed in the MPI. Small amounts of sediment could enter the river from

user-created trails and areas where boats have been pulled up on shore along the mainstem Deschutes. A small amount of riparian vegetation could be altered or removed due to these same activities. However, because of the size and flow of the Deschutes River and the small amount of area disturbed, both the sediment/turbidity indicator and the water temperature indicator would be minimally affected. User-created trails and dispersed camping sites along Deschutes River tributary streams are much less frequent than on the mainstem. Those trails are also less used by recreationists because access is often blocked by private lands. Therefore, trampling of streambanks or riparian vegetation by recreationists on BLM-administered lands along tributary streams is expected to be minimal.

Because the road is close to the Deschutes River at several locations between the locked gate (MP 61.9) and Macks Canyon (MP 23), vehicular use could result in small amounts of sediment entering the river. Vehicular use of the Deschutes River access road could also result in limited sediment delivery at the mouths of tributary streams that the road crosses. The road and some associated bank stabilization structures along the river are also preventing the establishment of riparian vegetation in some areas.

## **B. Cumulative Effects**

"Cumulative effects" are defined in 50 CFR 402.02 as those effects of "future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation." The action area for this consultation includes the Lower Deschutes River and its tributaries on BLM land downstream from Pelton Dam. The BLM identified no specific private or state actions that are reasonably certain to occur in the future that would affect MCR steelhead or their habitat within the action area. Since the BLM is the primary manager (171,849 acres) of the land along the Lower Deschutes River, Federal actions are more likely to dominate stream conditions.

The NMFS is not aware of any specific future actions that are reasonably certain to occur on non-Federal lands. Past actions by ODFW have excluded livestock grazing from 26 of the 29 miles of State-owned lands along the mainstem Deschutes River. In addition, private landowners and the Confederated Tribes of Warm Springs (CTWS) have excluded grazing from 10 to 12 miles of the mainstem Deschutes and approximately 75 miles of Lower Deschutes River tributary streams (memorandum from Jim Newton, Oregon Department of Fish and Wildlife commenting on BLM – Lower Deschutes River Biological Opinion, August 11, 1999).

## **VI. CONCLUSION**

The NMFS has determined that, when the effects of continuing recreational activities on BLM lands along the mainstem Deschutes River and tributaries addressed in this Opinion are added to the environmental baseline and cumulative effects occurring in the action area, they are not likely to jeopardize the continued existence of MCR steelhead. Additionally, NMFS concludes that the subject actions would not cause adverse modification or destruction of designated critical habitat for MCR steelhead. These conclusions are based on the following considerations: 1) The percentage of total

MCR steelhead redds present in the mainstem Deschutes River and tributaries trampled by recreationists is expected to be low; 2) the combination of average water velocity, average depth, and association with overhanging vegetation or other types of cover at near-shore sites where MCR steelhead redds in the mainstem Deschutes River are typically found should discourage many human waders from wading in those areas; 3) lack of legal public access to most BLM-administered lands along Deschutes River tributaries is expected to limit recreational opportunities along these streams and, therefore, minimize impacts from recreational use; and 4) all relevant aquatic habitat indicators in the mainstem Deschutes River and tributaries would be at least maintained. In reaching these conclusions, NMFS has considered the best scientific and commercial data available as documented herein and by the BA.

## **VII. CONSERVATION RECOMMENDATIONS**

Section 7 (a)(1) of the ESA directs Federal agencies to utilize their authorities to further the purposes of the ESA by carrying out conservation programs for the benefit of the threatened and endangered species. Conservation recommendations are discretionary measures suggested to minimize or avoid adverse effects of a proposed action on listed species, to minimize or avoid adverse modification of critical habitat, or to develop additional information. The NMFS has no additional conservation recommendations regarding the actions addressed in this Opinion.

## **VIII. REINITIATION OF CONSULTATION**

Reinitiation of consultation is required if: 1) The action is modified in a way that causes an effect on the listed species that was not previously considered in the BA and this Opinion; 2) new information or project monitoring reveals effects of the action that may affect the listed species in a way not previously considered; or 3) a new species is listed or critical habitat is designated that may be affected by the action (50 CFR 402.16). The BLM, Prineville District, may also be required to reinitiate consultation if the continuing actions are not consistent with conservation measures developed through the pending consultation on land and resource management plans for Federal land management units in the Mid and Upper Columbia River Basins.

## **IX. REFERENCES**

Section 7(a)(2) of the ESA requires biological opinions to be based on "the best scientific and commercial data available." This section identifies the data used in developing this Opinion in addition to the BA and additional information requested by NMFS and provided by the Prineville BLM District.

Bureau of Land Management; Bureau of Indian Affairs, Confederated Tribes of the Warm Springs Reservation; Oregon State Parks & Recreation Department; Oregon Department of Fish and Wildlife; Oregon State Marine Board; Oregon State Police; Deschutes River Management

- Committee; Wasco, Sherman, and Jefferson Counties; and City of Maupin. 1993. Final Lower Deschutes River Management Plan and Environmental Impact Statement–Volume I. January.
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- Dufour, J. 1995. Effects of Main Salmon River Floatboating Activities on Snake River Sockeye Salmon and Snake River Spring/Summer Chinook Salmon. Sawtooth National Recreation Area, Sawtooth National Forest. Biological Assessment. March.
- National Marine Fisheries Service (NMFS). 1996. Making ESA Determinations of Effect for Individual or Grouped Actions at the Watershed Scale. NMFS, Environmental and Technical Services Division, Habitat Conservation Branch, 525 NE Oregon Street, Portland, Oregon.
- National Marine Fisheries Service (NMFS). 1997. Status Review Update for Deferred and Candidate ESUs of West Coast Steelhead. December.
- National Marine Fisheries Service (NMFS). 1999. The Habitat Approach: Implementation of Section 7 of the Endangered Species Act for Actions Affecting the Habitat of Pacific Anadromous Salmonids. Guidance memorandum from Assistant Regional Administrators for Habitat Conservation and Protected Resources to staff. 13 pages. August. NMFS, 525 NE Oregon Street, Suite 500, Portland, Oregon 97232-2737.
- Oregon Department of Fish and Wildlife (ODFW). 1997. Lower Deschutes River Subbasin Management Plan. July.
- Roberts, B.C., and R.G. White. 1992. Effects of angler wading on survival of trout eggs and pre-emergent fry. North American Journal of Fisheries Management. 12:450-459.
- U.S. Department of Agriculture (USDA) and U.S. Department of Interior (USDI). 1994. Environmental Assessment for the Implementation of Interim Strategies for Managing Anadromous Fish-producing Watersheds in Eastern Oregon and Washington, Idaho, and Portions of California (PACFISH). March.
- Zimmerman, C.E. and G.H. Reeves. 1998. Steelhead and Rainbow Trout: Early Life History and Habitat Use in the Deschutes River, Oregon. 1997 Annual Report. U.S. Forest Service Pacific Northwest Research Station and Oregon State University.

## **X. INCIDENTAL TAKE STATEMENT**

Section 4 (d) and Section 9 of the ESA prohibit any taking (harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in any such conduct) of listed species without a specific permit or exemption. Harm is defined to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing behavioral patterns such as breeding, feeding, and sheltering (64 FR 60727; November 8, 1999). Harass is defined as actions that create the likelihood of injuring listed species to such an extent as to significantly alter normal behavior patterns which include, but are not limited to, breeding, feeding, and sheltering. Incidental take is take of listed animal species that results from, but is not the purpose of, the Federal agency or the applicant carrying out an otherwise lawful activity. Under the terms of Section 7(b)(4) and Section 7(o)(2), taking that is incidental to, and not intended as part of, the agency action is not considered prohibited taking provided that such taking is in compliance with the terms and conditions of this incidental take statement. An incidental take statement specifies the impact of any incidental taking of endangered or threatened species. If necessary, it also provides reasonable and prudent measures that are necessary to minimize impacts and sets forth terms and conditions with which the action agency must comply in order to implement the reasonable and prudent measures.

### **Amount or Extent of Take**

The NMFS anticipates that the subject actions covered by this Opinion have more than a negligible likelihood of resulting in incidental take of MCR steelhead. Some level of incidental take is expected to result from the potential for recreationists to trample on MCR steelhead redds and disturbance of spawning adult steelhead. Because of the inherent biological characteristics of aquatic species such as MCR steelhead, however, the likelihood of discovering take attributable to these actions is very limited. Effects of actions such as those addressed in this Opinion are largely unquantifiable in the short term, and may not be measurable as long-term effects on the species' habitat or population levels. Therefore, although NMFS expects some incidental take to occur due to the actions covered by this Opinion, the best scientific and commercial data available are not sufficient to enable NMFS to estimate a specific amount of incidental take of listed fish at any life stage.

### **A. Effect of the Take**

In this Opinion, NMFS has determined that the level of anticipated take is not likely to result in jeopardy to MCR steelhead or to destroy or adversely modify designated critical habitat for MCR steelhead when the reasonable and prudent measures are implemented.

### **B. Reasonable and Prudent Measures**

The NMFS believes the following reasonable and prudent measures are necessary and appropriate to minimize the likelihood of take of MCR steelhead resulting from the actions covered by this Opinion. The BLM shall:

1. Minimize the likelihood of incidental take resulting from harassment of spawning adult MCR steelhead or trampling on MCR steelhead redds by recreationists accessing and using the mainstem Deschutes River and tributaries from BLM-administered lands.
2. Minimize the likelihood of incidental take associated with the use of designated trails, developed campgrounds, dispersed camping areas, access roads, and developed boat ramps by avoiding or limiting impacts on riparian vegetation, water quality, and sediment production.

### **C. Terms and Conditions**

To be exempt from the prohibitions of section 9 of the ESA, the BLM must comply with the following terms and conditions, which implement the reasonable and prudent measures described above. These terms and conditions are non-discretionary.

1. To implement reasonable and prudent measure #1, above, the BLM shall:
  - a. Inform and educate recreationists using BLM facilities and lands that spawning adult MCR steelhead and/or their redds are or may be present in the Deschutes River and certain tributaries from March 15 to July 15, that MCR steelhead are listed as threatened and protected under the ESA, and that areas where spawning adult MCR steelhead and/or steelhead redds are likely to be present should be avoided by:
    - i. Posting signs at all developed campgrounds, developed boat ramps, the more frequently used dispersed campsites, trailheads, vehicle parking areas along access roads, etc. and verbally as BLM personnel encounter recreationists in the field; and,
    - ii. Providing written and illustrated information with issuance of the various BLM recreation permits describing the appearance of steelhead redds and likely areas where they may occur.
  - b. Submit an end-of-year report to NMFS summarizing the results of the information and education program regarding the presence of ESA listed MCR steelhead in the mainstem Deschutes River and its tributaries.
2. To implement reasonable and prudent measure #2, above, the BLM shall:
  - a. Identify those recreational areas and facilities where impacts to riparian vegetation, streambank erosion, and/or sediment input to streams are most severe; and
  - b. Direct educational efforts and other restoration and protective measures at these sites, including site closure if necessary to minimize the likelihood of incidental take.



